EMBRY-RIDDLE
Aeronautical University™

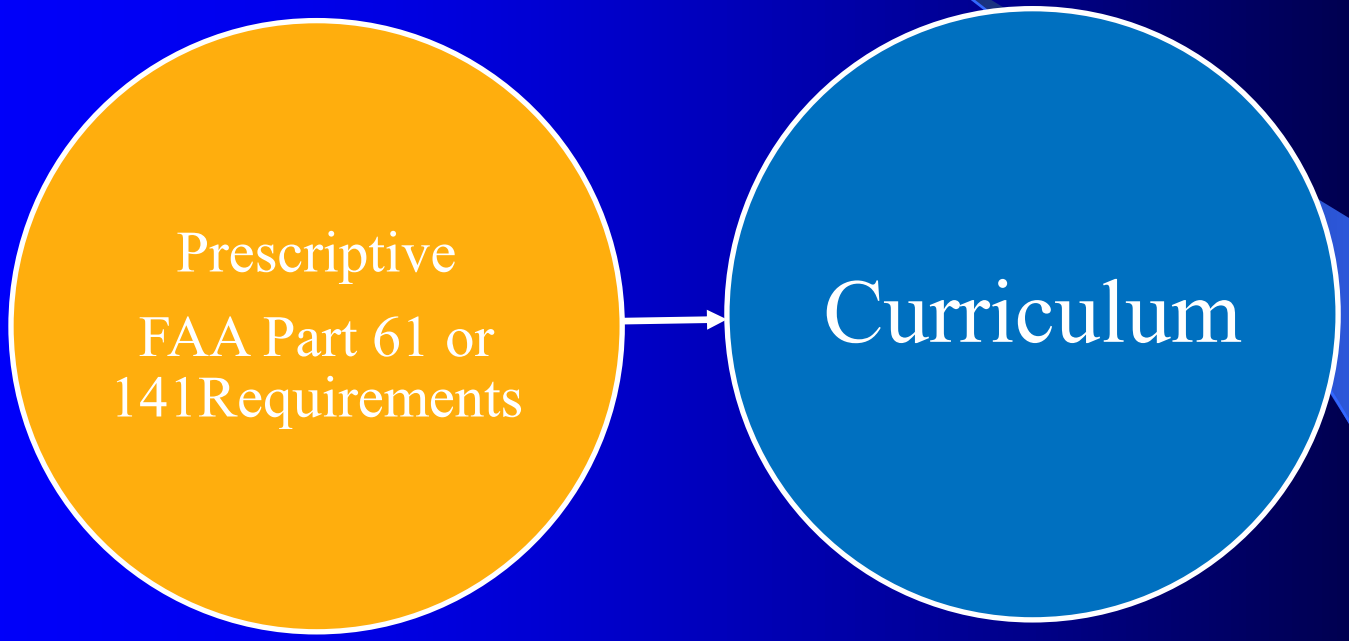
Instructional Design Support Systems

The Key to Aeronautical Decision Making Development

"Safety-Quality-Professionalism"

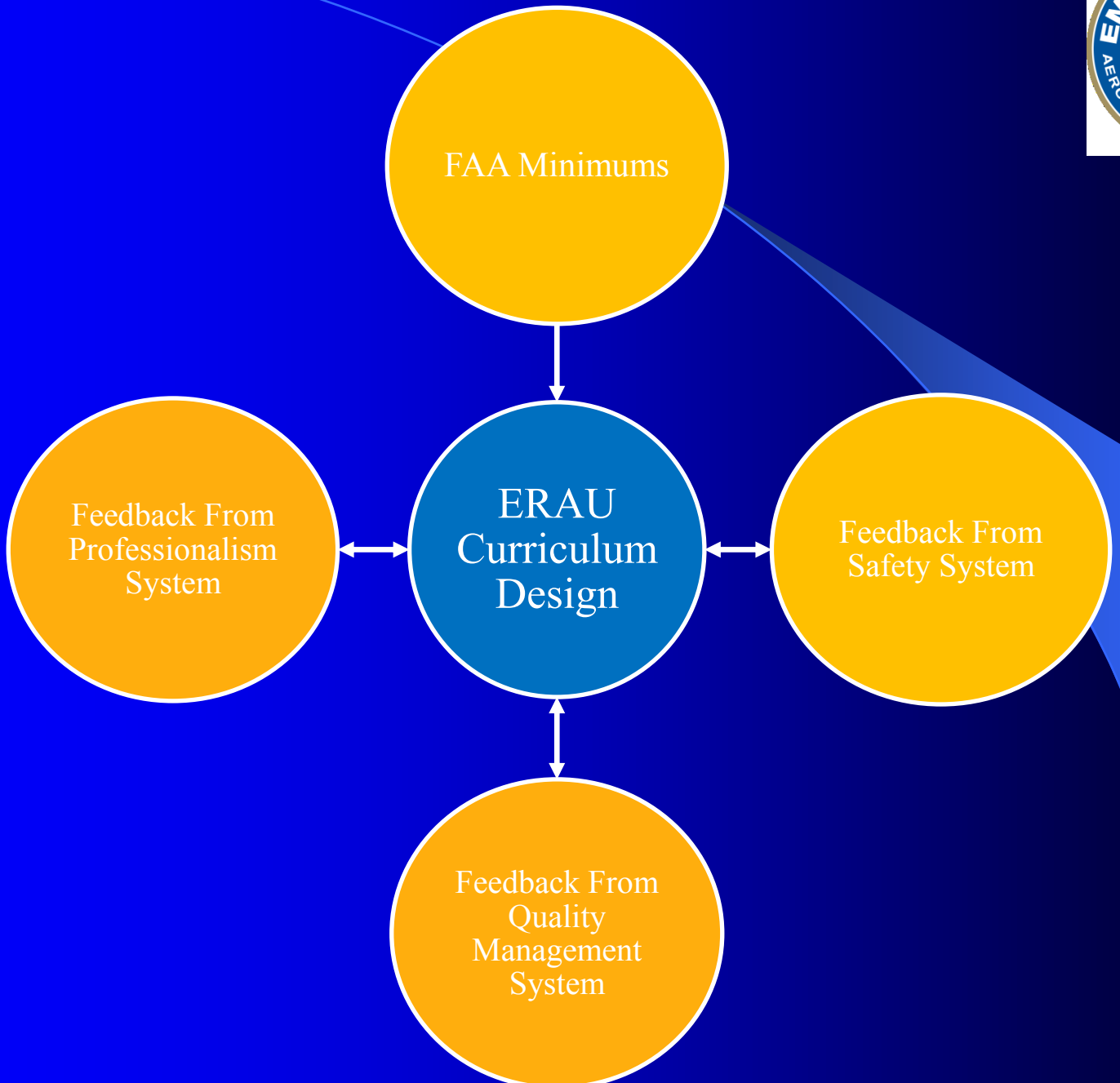
Professor Ken Byrnes

Traditional Curriculum Designs

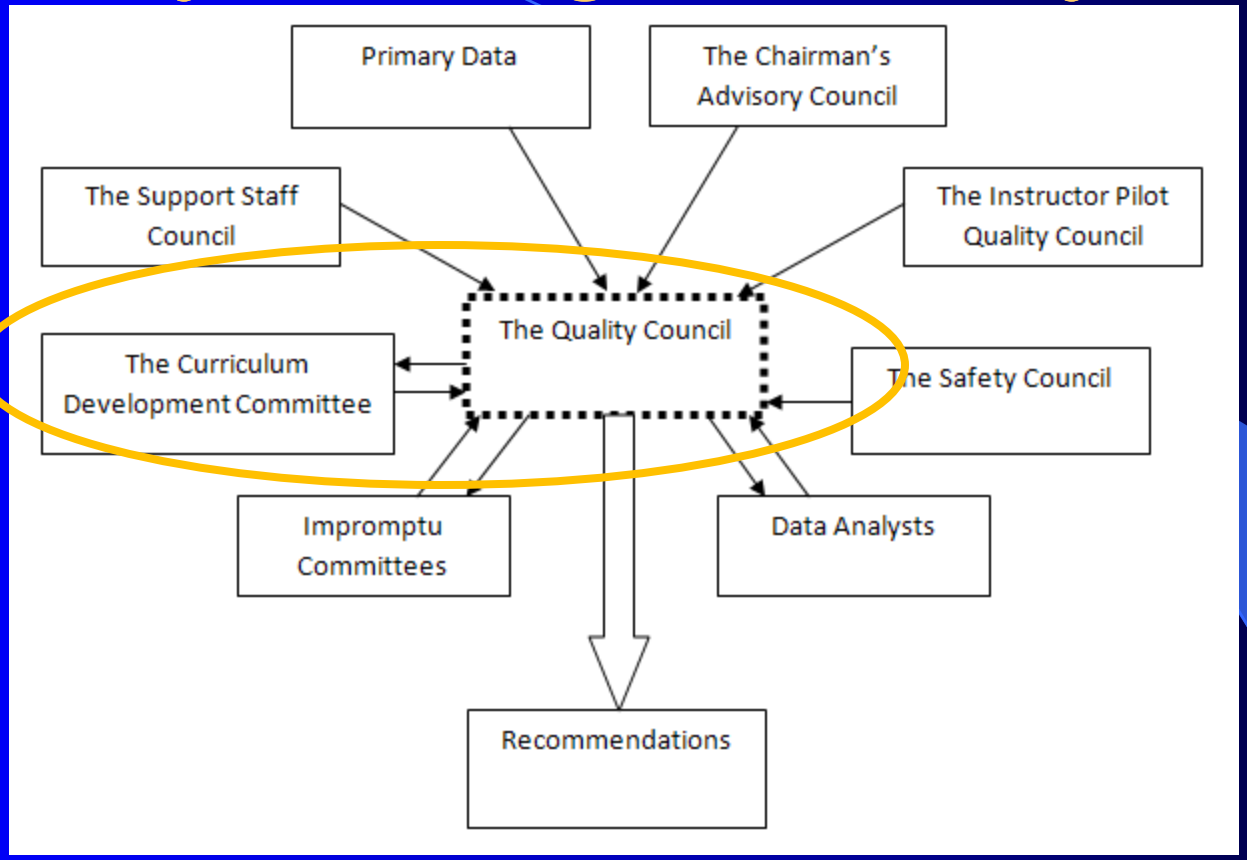


Minimum Knowledge,
Skills, & Experience

ERAU Instructional Design



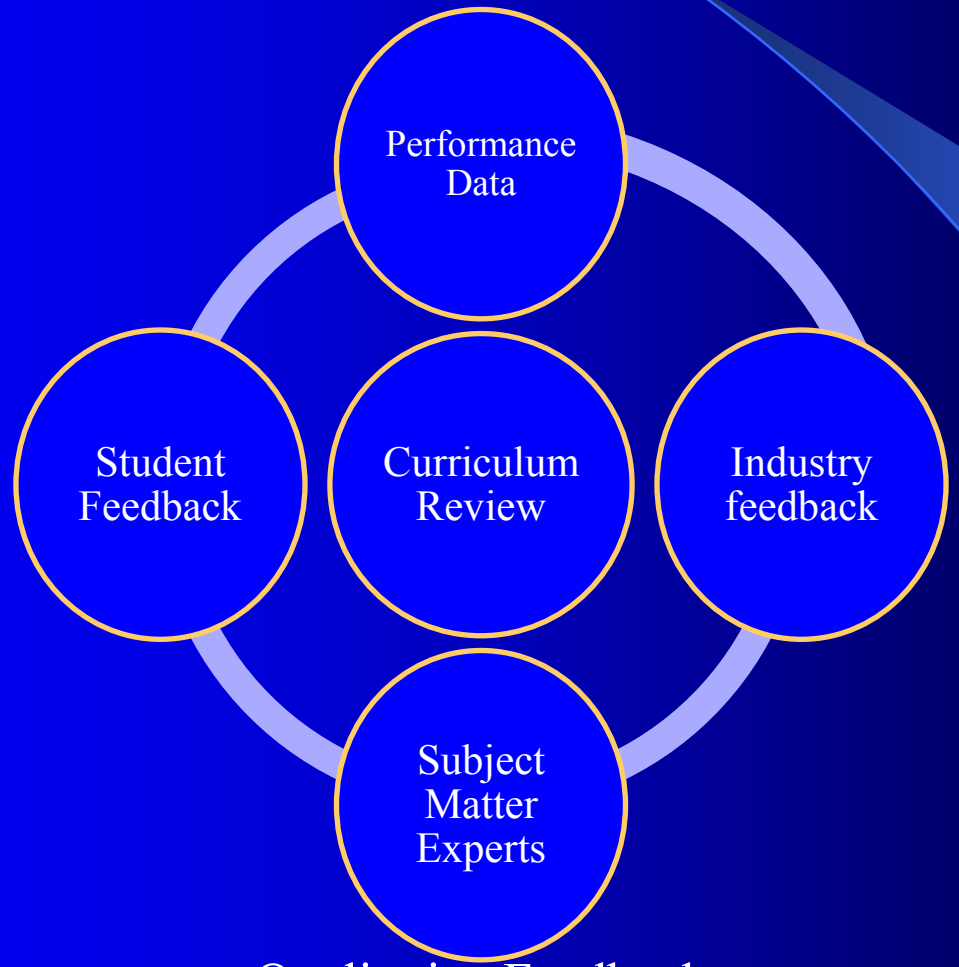
Quality Management System



Designed to centralize qualitative feedback and quantitative data so that it can be analyzed appropriately, trends can be identified, and recommendations can be made so that appropriate corrective action can be taken.

Quality Management System
Curriculum Review

80+ Variables Tracked



Surveys
Advisory Council

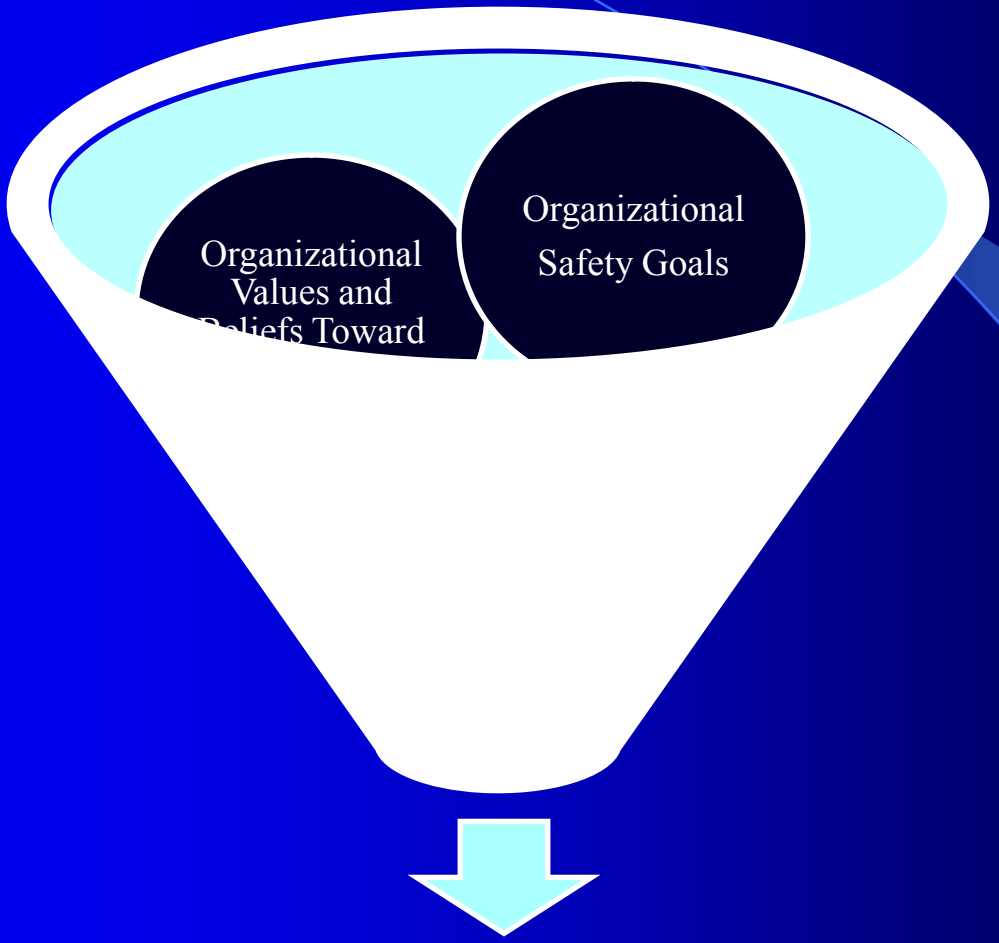
Industry Surveys
Advisory Council
-Competency Outcomes
Performance Data

Qualitative Feedback

Safety System

Safety Culture

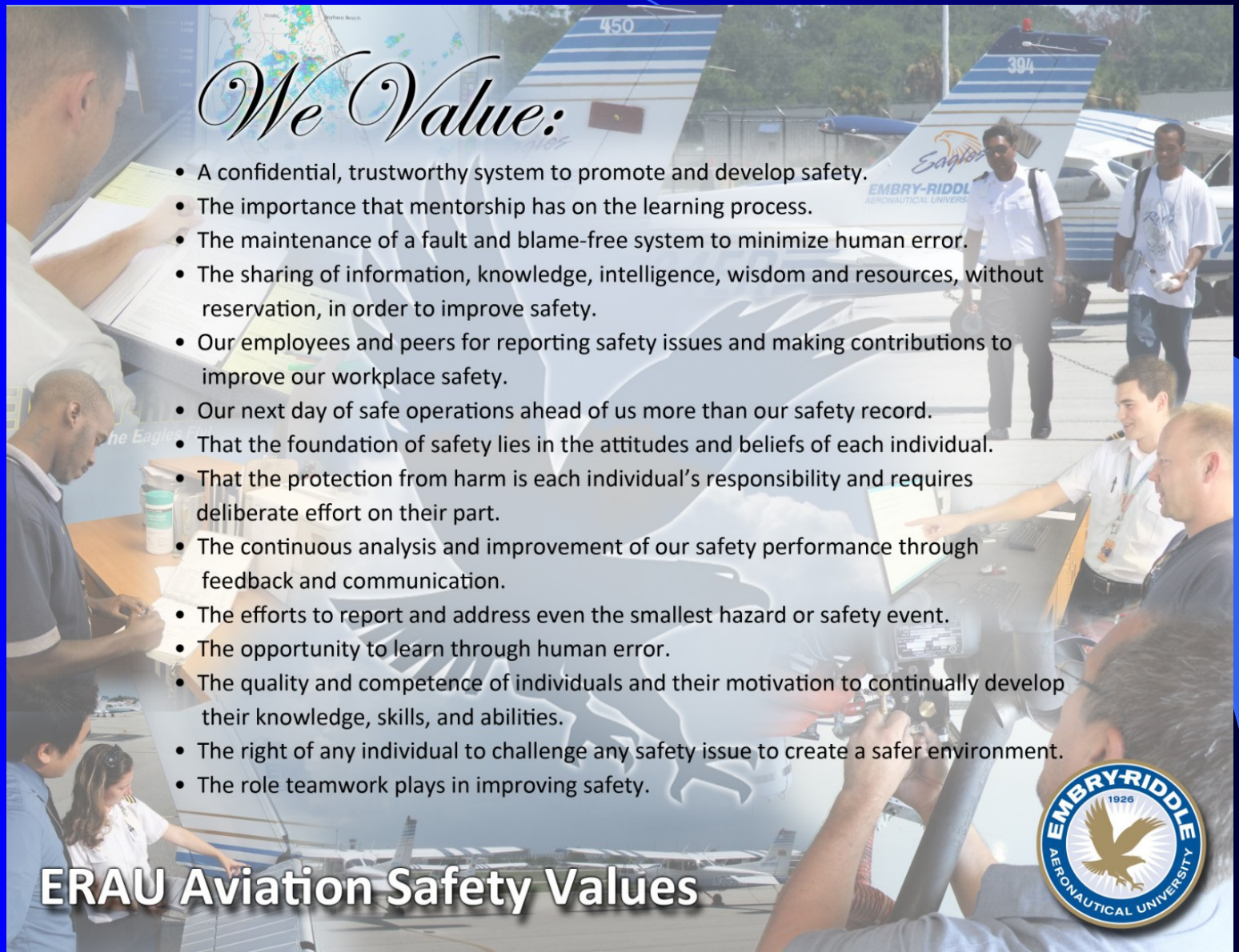
Commitment based safety over compliance based safety

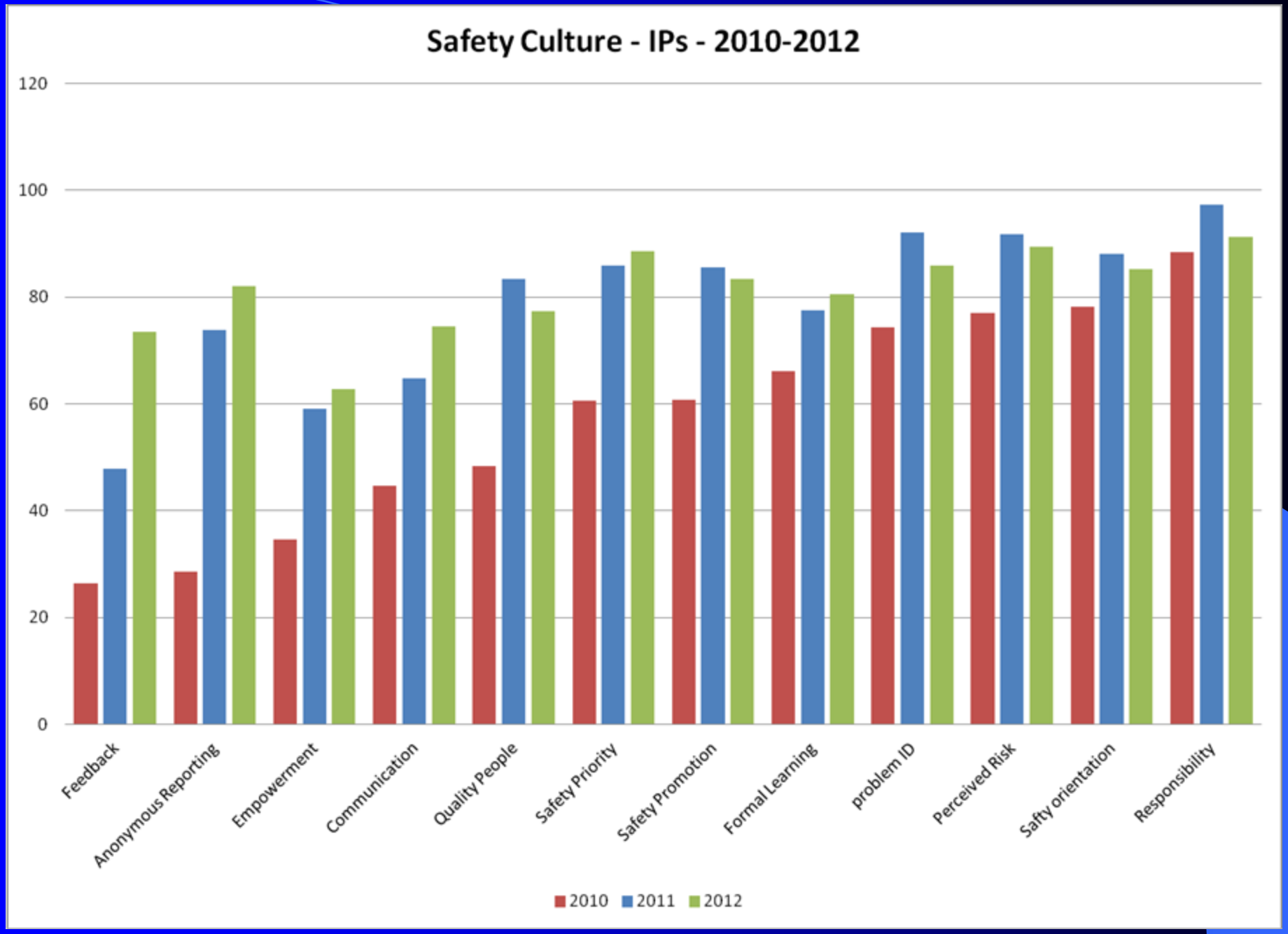


Safety Behavior

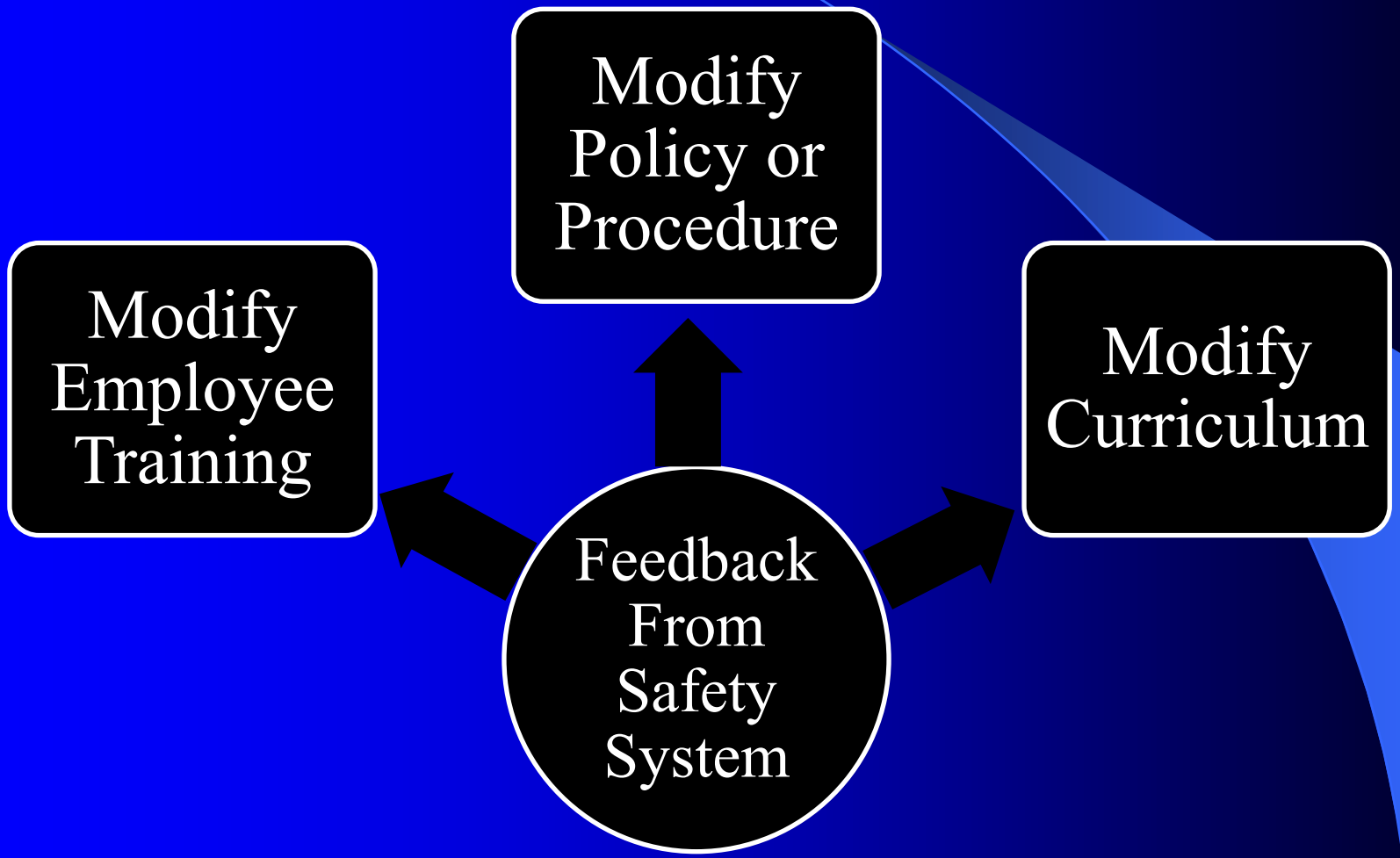
Defining Safety Culture

Safety Values




Safety Culture - IPs - 2010-2012
120
100
80
60
40
20
0
Feedback
Anonymous Reporting
Empowerment
Communication
Quality People
Safety Priority
Safety Promotion
Formal Learning
problem ID
Perceived Risk
Safty orientation
Responsibility
2010
2011
2012

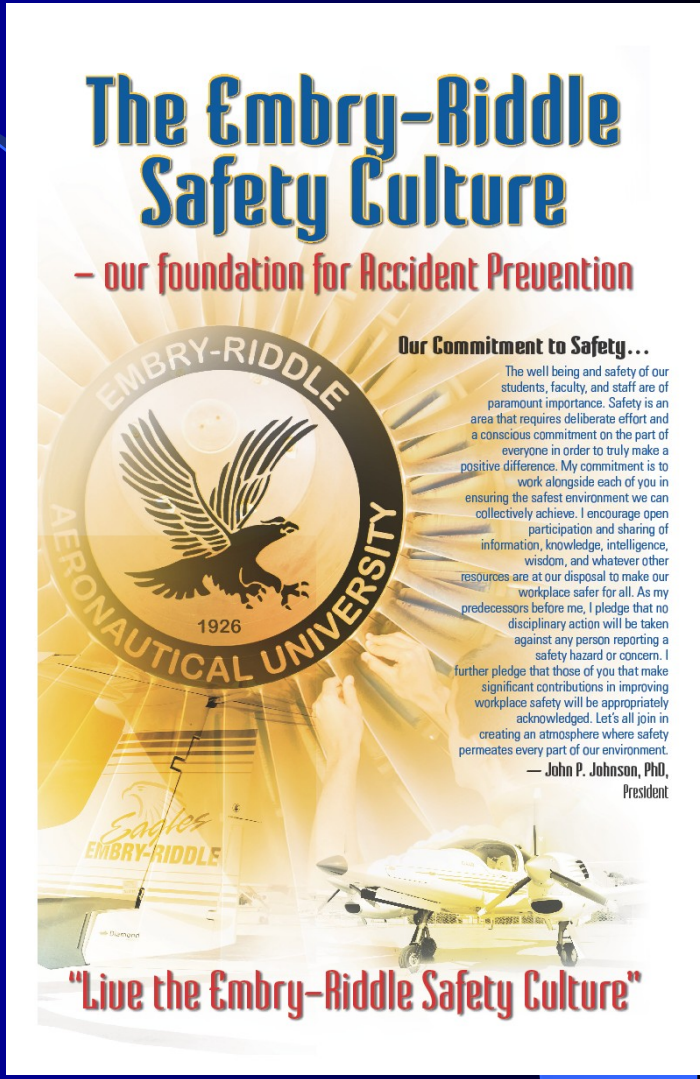
Safety System



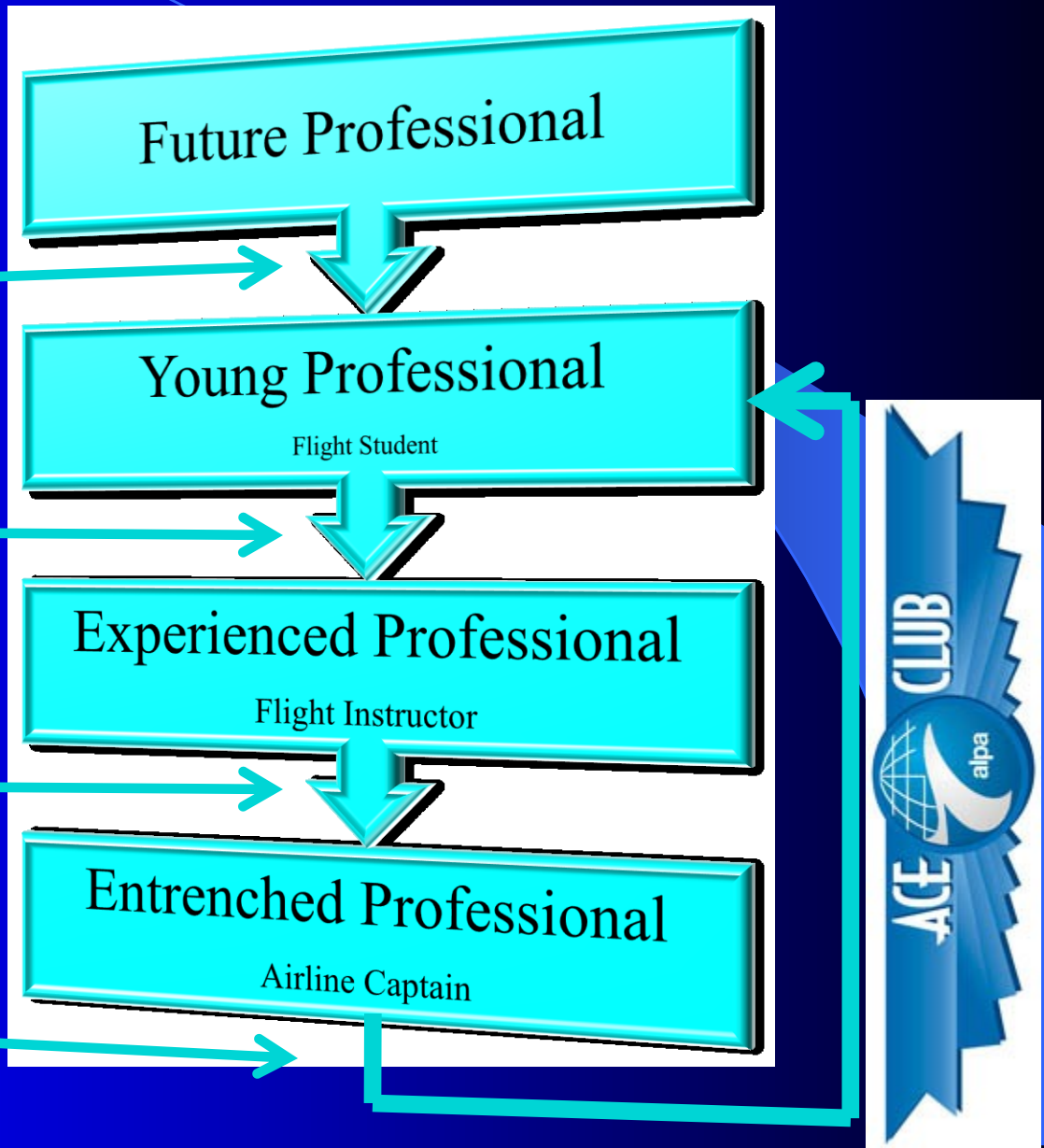
Safety - Results

Safety Record (last 4+ years)

- 321,781+ flight training hours accident-free in the 4+ years.(3/9/12)
- Bird strike 3/9/2012
  - Approximately 210,000+ flight activities
  - 620,000+ takeoffs and landings
  - 6,112+ Pilot Certificates/Ratings issued
- Produces our most valuable export:
  - Safety conscious graduates



Development of Professionalism



Aspects of Professionalism

Professionalism is implied by:

1. Personal and technical competence
2. The neatness/attractiveness of personal appearance and dress.
3. The manner in which communication occurs or business affairs are conducted (conduct)

Professional Expectations
Organizational

IP Code of Conduct

- Above all else, SAFETY is always our number one priority
- Project a Professional appearance and attitude
- Accept all types of students regardless of their differences
- Keep information concerning students confidential
- Foster an open line of communication with your students and manager
- Convey a positive attitude towards all training activities
- Address student concerns in a timely and proper manner
- Take pride in your students' accomplishments
- Be a mentor to your students
- Treat each student with honesty and integrity
- Recognize the great responsibility you have as a flight instructor

Remember that the knowledge you impart on your students will remain with them the rest of their flying careers

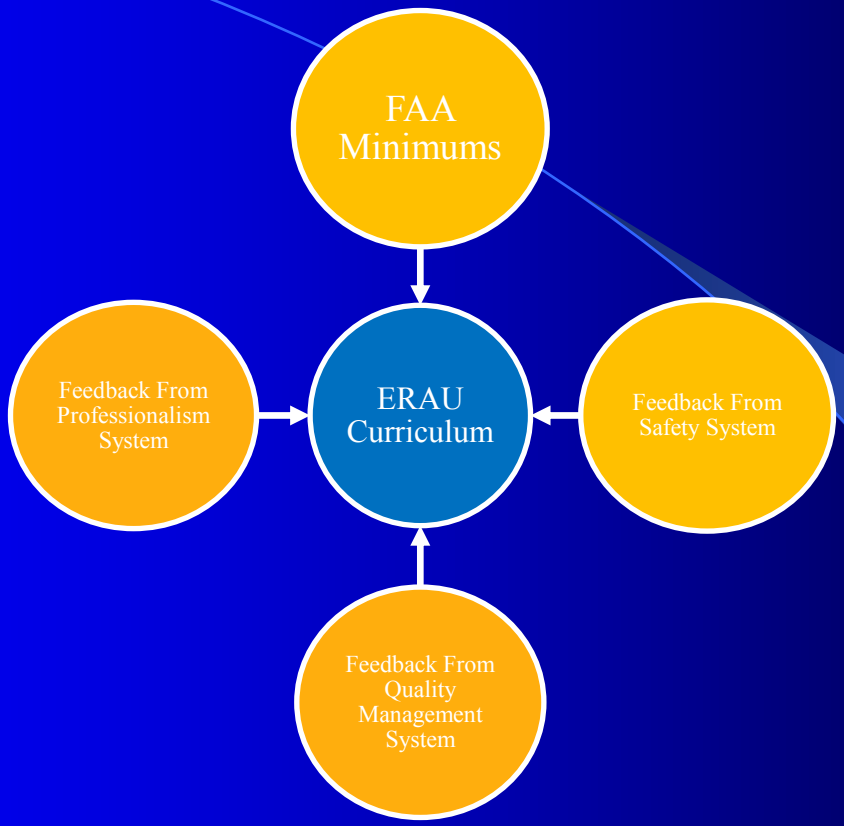
Professional Pilot Code of Ethics

- Professional Pilots value the safety of themselves and those they fly with at all times!
- Professional Pilots are prepared for every flight and make the most of every hour spent in the air, in the simulator, or in oral preparation!
- Professional Pilots are on time to every activity!
- Professional Pilots dress appropriately for every flight activity!
- Professional Pilots exemplify self-discipline and exercise sound judgment at all times!
- Professional Pilots never mix alcohol and aviation or driving and never use illegal substances.
- Professional pilots treat everyone with dignity and respect.
- Professional Pilots adhere to the ERAU student honor code, ERAU flight rules, and FAA regulations.
- Professional Pilots love to fly and have fun doing it!
- Professional Pilots are the only kind of pilots that fly at Embry-Riddle Aeronautical University!

Embry Riddle is not a Flight School!!!!!!!
We Educate and Train Professional Pilots to Industry Standards!!

Students who violate "the code" must go before a panel of their peers.

ERAU Instructional Design



Using feedback from all of the systems, curriculum is developed that will exceed the knowledge, skills, attitude, and experience required by FAA and Industry.

Special focus is placed on culture and decision making.

Components of Good Decision Making

- Psychomotor skills – stick and rudder
- High level cognitive skills – vast knowledge
- Affective skills - the right mind-set and character
  - Safety Culture
  - Professionalism

Components of Good Decision Making

- Psychomotor skills
- High level cognitive skills
- Affective skills
  - Safety Culture
  - Professionalism

- Defined by the organizational goals, values, and beliefs.
- Communicated and improved through quality, safety, and professionalism systems.

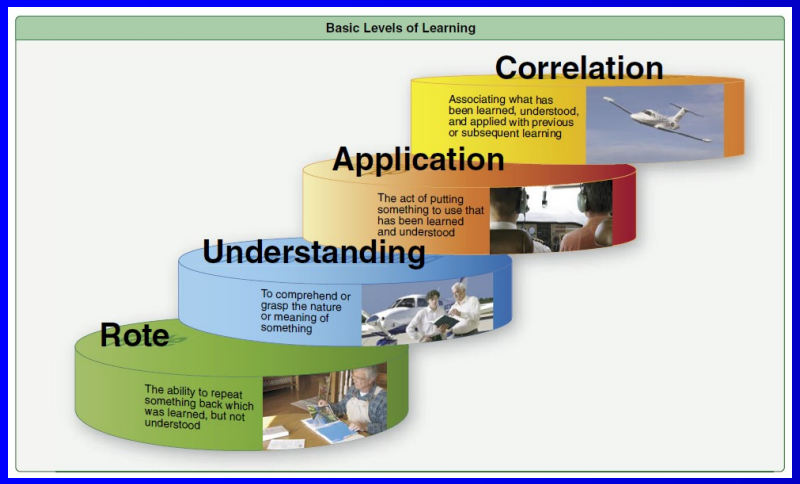
Developing Affective Skills

Where does safety attitudes and professionalism begin?

Education and Training

- This is where a student begins to identify with his/her profession and takes on some of the personal attributes associated with it.

Developing Aeronautical Decision Making
Level 6 Flight Training Devices



- Scenario training
- Effective/realistic emergency training
- Expertise in aviation is related to specific experience with a task rather than overall global experience in terms of total flight time (O'Hare, 2003) (Lindvall, 2011, p. 32).

Feedback Systems

- Part 61 –
  - No approved curriculum
  - No feedback
  - Minimum requirements don't match pilot inefficiencies
    - 500hr of 1500hr ATP requirement is XC (33% of time)
    - 11% of accidents occur in XC phase
- Part 141 –
  - Curriculums remain static once approved until regulation change
  - Inspections are based on record keeping and rule compliance
  - No safety system or quality system requirement
    - No formal feedback system
- Without an organizational system reliance is placed on the individual, varying, attitudes and beliefs of employees
- NASA ASRS limited feedback
- MPL –
  - No prescriptive minimums
  - Closed loop quality management system and safety management system required

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